

DEPARTMENT OF THE ENVIRONMENT  
AIR AND RADIATION MANAGEMENT ADMINISTRATION

**RESPONSE TO COMMENTS**

for the

PUBLIC HEARING held on August 28, 2013  
in BALTIMORE, MD

related to Subtitle COMAR 26.09, The Maryland CO<sub>2</sub> Budget Trading Program, Chapters .01,  
.02 and .03.

Purpose of Hearing: The purpose of the public hearing was to allow for public comment on the Department's proposal for new regulations COMAR 26.09.01 to .03.

Date and Location: The public hearing was held on August 28, 2013 at 10:00 a.m., at 1800 Washington Boulevard, 1<sup>st</sup> Floor Terra Conference Room, Baltimore MD 21230.

Hearing Officer: Deborah Rabin, Regulations Coordinator, Air and Radiation Management Administration, served as Hearing Officer.

Attendance: The following interested parties attended the hearing:

James McGee, Alexander & Cleaver, PA  
Steve Arabia, NRG Energy, Inc.  
David Bacher, NRG Energy, Inc.

Statement: The Department's statement was submitted into the record by Mr. Luke Wisniewski, Chief of the Climate Change Division of the Air and Radiation Management Administration, Maryland Department of the Environment.

Comments Received: Comments were received from the following:

1. Maureen A. Healey, representing the American Coalition for Clean Coal Electricity
2. Walter Stone, representing NRG Energy, Inc.
3. Denise R. Foster, Matt LaRocque, Paul Sotkiewicz, and Gary Helm, representing PJM
4. Josh Craft, representing Northeast Energy Efficiency Partnerships

Comments and Responses: The comments received by the Department during the 30-day comment period and at the public hearing that relate to the proposed action are summarized with the Department's responses below.

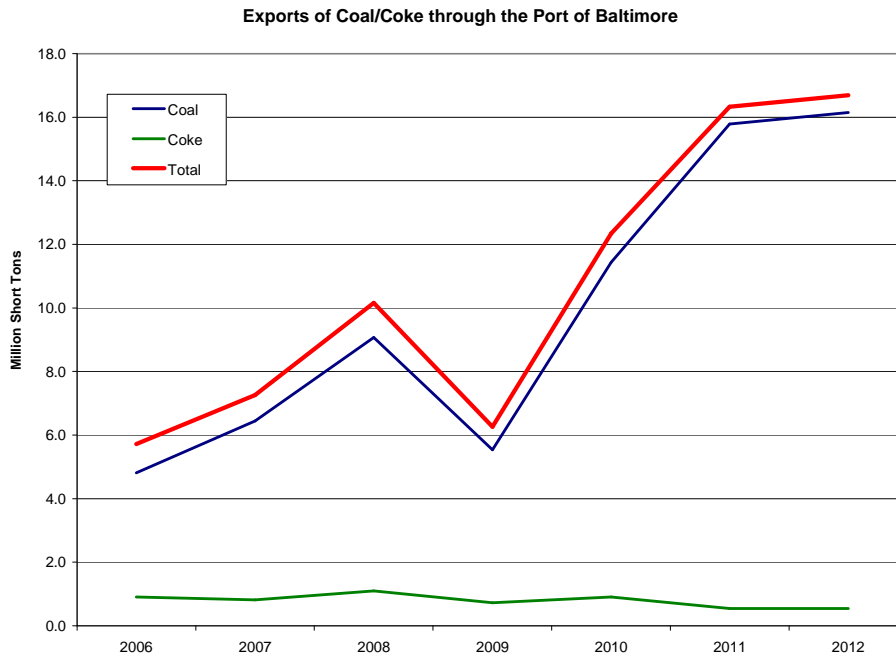
**Relevant to proposed changes**

**1. COMMENT:** The proposed changes threaten to cause the widespread closure of coal-based electric generation facilities in Maryland, posing risks to electric reliability in the National Capital region and potential job loss in the coal, utility and rail sectors.

**RESPONSE:** Since 2007, market forces have reshaped the electricity generating mix in many states including Maryland. Changing fuel prices, federal regulations, and electric generating facility retirements are factors contributing to these changes. Specifically, lower natural gas prices and higher coal prices have reduced the difference between the cost to produce a megawatt –hour of electricity using natural gas and the cost to produce the same electricity using coal as a fuel. In Maryland, these changes have led to a doubling of electricity generation from natural gas-fired plants and a 10% drop in electricity generation from coal-fired plants. Such market-based forces have driven down CO<sub>2</sub> emissions about 40%. Maryland supported the decision among the Regional Greenhouse Gas Initiative (RGGI) participating states to lower the overall cap to 91 million tons of CO<sub>2</sub> emissions, close to the current emission levels from the electricity sector, to preserve these significant reductions.

The 2012 RGGI program review was supported by an extensive regional stakeholder process that included the regional transmission organizations (RTOs) in the RGGI region. No concerns about electricity system reliability at either the regional level or individual state level have been raised by the RTOs. PJM provided limited comments to the Department regarding a revision to a paper they prepared in 2009 entitled “Potential Effects of Proposed Climate Change Policies on PJM’s Energy Market”. PJM revised the paper to analyze the effect of low gas prices and increasing coal prices combined with current climate change programs. PJM expects changing operating costs to increase electricity generation from natural gas units and decrease electricity production from coal. Neither widespread retirement of coal plants, nor reliability issues were noted.

World-wide high demand for coal still exists well into the future and the U.S. has one of the largest reserves. U.S. coal exports are increasing. The widening of the Panama Canal will boost exports from the eastern U.S. by opening a more direct route to Far East markets in China and India. Increased coal exports have driven the price of coal upward. Specifically, as reflected in the graph below, coal exports travelling through Maryland are increasing, thereby offsetting potential job losses in the rail and coal sectors.



As part of the 2012 Comprehensive Review, the Northeast States for Coordinated Air Use Management (“NESCAUM”) performed a Regional Economic Models Incorporated (“REMI”) economic impact analysis for the impacts resulting from potential changes to the RGGI program. This analysis projects the continuation of the RGGI program with the proposed changes will result in positive effects on the overall economy in Maryland including additional jobs and increased personal income. These results further support the decision of Maryland to incorporate the proposed amendments into the Maryland CO<sub>2</sub> Budget Trading Program.

**2. COMMENT:** The Federal Energy Regulatory Commission needs to initiate an independent evaluation of the potential reliability risks associated with the revisions to the RGGI program before the proposed revisions are implemented.

**RESPONSE:** While the Federal Energy Regulatory Commission (FERC) has oversight responsibilities for electricity reliability, the first line of responsibility for system reliability rests with the regional transmission organizations (RTOs). The 2012 RGGI program review was supported by an extensive regional stakeholder process that included the RTOs. No concerns about electricity system reliability at either the regional level or individual state level have been raised by the RTOs in the three transmission regions that serve the RGGI states.

In addition, the Maryland Public Service Commission and its counterparts in the other RGGI states, which participate in RGGI as members of the Board of Directors, have considered the impacts of the lower emissions cap and other regulatory changes on consumer impacts, and support implementation of the revisions.

**3. COMMENT:** The reduced cap would substantially increase CO<sub>2</sub> allowance prices and auction revenues for participating states. The projected increased allowance costs of \$4 - \$8 per ton during 2014-2020 would be reflected in the economic dispatch costs of coal generators in Maryland, further reducing their competitiveness in the PJM system.

**RESPONSE:** The price of allowances is only one factor that affects the economic dispatch order. Other factors, including fuel prices, efficiency of the generating plant, level of demand and resources available to provide electricity, the cost of pollution control equipment installed on generating units to control criteria and other pollutants, and transmission constraints are much more determinative of dispatch order. In addition, the Cost Containment Reserve (CCR) will act as a relief valve to address unexpected short term allowance price spikes. The CCR will consist of a fixed quantity of additional allowances (5 million in 2014 and 10 million thereafter), that will be held in reserve, and made available for sale if allowance prices exceed pre-defined price triggers.

Even though allowance prices may increase, the number of allowances each state receives is greatly reduced. Higher allowance prices do not necessarily mean substantially higher auction revenue.

The 91 million ton cap was selected after extensive analysis using the Integrated Planning Model (IPM) to simulate high, low and reference case emission scenarios. Projected allowance prices were analyzed for their impact on electricity bills and the overall economy in Maryland and the other RGGI states. These analyses project very modest increases in the electricity bills of Maryland ratepayers – less than 1% for all classes of ratepayers – and an overall positive impact on Maryland's economy.

**4. COMMENT:** The proposed revisions would severely restrict the use of banked allowances previously acquired in good faith by market participants, reducing flexibility and increasing the costs of compliance with the new program. MDE should revise the proposed rule to enable full utilization of banked allowances.

**RESPONSE:** The revisions to the Maryland CO<sub>2</sub> Budget Trading Program do not act in any way to restrict the use or future acquisition of banked allowances. Rather, Maryland's regulatory amendments adjust the number of allowances offered for sale over the period from 2014-2020 to account for the substantial private bank of allowances that compliance entities have acquired during the first and second control periods due to the inflated emissions cap and oversupply of allowances. Previously purchased allowances that have not been surrendered for compliance purposes (i.e., banked allowances) can continue to be held. These allowances may be used, sold or traded in the future.

The RGGI states publicly announced the selection of the 91 million ton CO<sub>2</sub> cap in early February 2013. With that knowledge, compliance entities have continued to purchase surplus allowances for banking and future use at prices that are reflective of the existing oversupply of allowances. This practice has led to an

additional increase in the size of the private bank. The IPM modeling performed to support the 2012 program review and selection of a lower cap indicates that the size of the private bank in January 2014 would result in the continuation of a non-binding cap for several years. To ensure a binding cap in 2014, the amendments to the Maryland CO<sub>2</sub> Budget Trading Program include provisions for adjustments to the number of allowances offered for sale to compensate for the surplus private allowance bank.

**5. COMMENT:** The competitive advantage for out-of-state generators will increase with the new RGGI cap.

**RESPONSE:** Electricity is dispatched based on market economics. The factors that determine the price at which generators sell electricity to the grid are complex. In general, environmental factors play a lesser role than fuel prices. Congestion constraints are also a factor that can limit imports of electricity.

The cost of CO<sub>2</sub> allowances is just one factor that may contribute to a price differential between in-state and out-of-state generators that has the potential to lead to “leakage” – the displacement of generation from RGGI power plants by non-RGGI plants with a higher carbon intensity that is the result of a price differential attributable to RGGI regulation. The RGGI states are closely monitoring leakage of emissions. Although there has been no evidence of emissions leakage, the RGGI states have committed to engage in a collaborative effort to identify and evaluate potential imports tracking tools, conduct further modeling to ascertain energy and price implications of any potential policy on emissions associated with imported electricity, and pursue additional legal research necessary, leading to a workable, practicable, and legal mechanism to address emissions associated with imported electricity. (see Principle IV.

Emissions Leakage in the document *RGGI 2012 Program Review: Summary of Recommendations to Accompany Model Rule Amendments* at:

[http://rggi.org/docs/ProgramReview/\\_FinalProgramReviewMaterials/Recommendations\\_Summary.pdf](http://rggi.org/docs/ProgramReview/_FinalProgramReviewMaterials/Recommendations_Summary.pdf) )

Although RGGI is the nation’s first regional greenhouse gas cap-and-trade program to reduce carbon dioxide (CO<sub>2</sub>) emissions from power plants, EPA is moving forward with a federal program to reduce greenhouse gas emissions from new and existing fossil fuel-fired power plants under Clean Air Act Section 111. Adoption of a federal Section 111 program for CO<sub>2</sub> emissions from electric generating units will likely subject non-RGGI power plants to equivalent or near equivalent regulatory requirements, thereby addressing any inequities attributable to RGGI, to the extent they exist.

**6. COMMENT:** Increasing Maryland's dependence on imported power will further strain the Eastern Interconnection, which already supplies huge quantities of electricity from the Midwest to the Mid-Atlantic and Northeast regions. Electric reliability in the National Capital area cannot be jeopardized due to its critical national security and defense functions. Any program that risks the loss of significant generation from plants that historically have served the National Capital

region deserves careful scrutiny from the FERC and other regulatory authorities prior to its implementation, including consideration of the issuance of Reliability-Must-Run orders for affected facilities.

**RESPONSE:** The 2012 program review process included extensive IPM modeling that was based in part on estimates of projected electricity demand through 2020 developed by the RTOs responsible for providing reliable electricity service to the RGGI region. The RTOs are required to ensure sufficient resource adequacy exists to serve anticipated demand and provide a margin of error beyond the projected peak days. The RTOs have not asserted that system reliability will be adversely impacted by these revised regulatory requirements.

In addition, the revised regulations establish a Cost Containment Reserve, which releases additional allowances into the auction if allowance prices reach predetermined price triggers. This mechanism was included to lessen the economic impacts of unexpected allowance price spikes.

**7. COMMENT:** The RGGI program – particularly as it is now proposed to be revised – is not only an ineffective and incomplete solution to the climate problem; it is fundamentally unfair and prejudicial to electric power providers in the RGGI states, including Maryland where some \$2 billion has been invested in reducing emissions from coal-fired power plants.

**RESPONSE:** The Department agrees that addressing climate change on a national and international basis is necessary. Maryland, along with other RGGI participating states, is engaging with U.S. EPA as it develops national greenhouse gas standards and emission guidelines for new and existing electric generating units under Section 111 of the Clean Air Act.

**8. COMMENT:** Maryland provides preferential treatment to generators with “stranded contracts” that cannot recover the cost of complying with RGGI by allowing them to purchase allowances at the reserve price starting in 2014. This discriminates against generators who do not have long term contracts and cannot recover all of their RGGI costs.

**RESPONSE:** The single cogeneration unit with a fixed price contract is allowed to purchase a limited number of allowances from the Long Term Contract Set Aside Account at the reserve price. Under a deregulated electricity market such as Maryland’s, merchant generators are free to participate in the PJM capacity and energy markets to recover their allowance costs, or even to enter into bi-lateral contracts with off-takers of energy and capacity.

**9. COMMENT:** RGGI should be reformulated to address stakeholder concerns by creating programs that encourage private investment in low- and no-carbon generation particularly through financing incentives for replacing coal plants with cost effective combinations of renewable energy and efficient natural gas plants, enhanced renewable portfolio standards, and provisions to expand clean and resilient distributed energy resources.

**RESPONSE:** By placing a price on carbon, RGGI provides a market-based

incentive to develop cleaner energy sources. Revenues from the RGGI auctions of CO<sub>2</sub> allowances fund the Strategic Energy Investment Fund (“SEIF”), administered by the Maryland Energy Administration (“MEA”). MEA is authorized by law to invest SEIF funds in the promotion, development, and implementation of clean energy, energy efficiency, and conservation programs. The SEIF also funds targeted programs to reduce electricity consumption by low-income and moderate-income residential customers. Economic studies conducted for the Department demonstrate that wise investment of RGGI funds for energy efficiency programs will reduce electricity demand, reduce ratepayers' overall bills, and produce a positive benefit to Maryland’s economy.

**10. COMMENT:** RGGI should be reformulated to address stakeholder concerns by reducing the cap less drastically to align what can be achieved through financing incentives for private investment in renewable energy and natural gas generation with the reductions demanded by the cap to provide more stable and moderate RGGI allowance prices and reduce or eliminate leakage problems. The CO<sub>2</sub> emissions from the regulated units during the last few years are not representative as emissions in those years were unusually low because of the recession, and the low price of natural gas which could exacerbate leakage problems when the economy improves and natural gas prices rise.

**RESPONSE:** RGGI’s IPM analysis for the amended model rule shows that based on historical and projected electricity demand and widely accepted fuel price projections, the 91 million ton CO<sub>2</sub> cap is both appropriate and effective. Although coal usage is expected to rise slightly before 2020, a significant difference between the price of natural gas and coal is expected to continue into the future.

Additionally, the Northeast States for Coordinated Air Use Management (“NESCAUM”) performed a Regional Economic Models Incorporated (“REM”) economic impact analysis for the impacts resulting from potential changes to the RGGI program, which further supports the decisions of Maryland and the other RGGI states to reduce the cap to 91 million tons of CO<sub>2</sub>.

The revised regulations add a CCR which releases additional allowances into the market under certain economic conditions and supports stable prices. This mechanism was included to buffer severe price fluctuations and can provide additional allowances in the event of changing market conditions.

**11. COMMENT:** RGGI should lower the trigger for the CCR to guard against leakage driven by high allowance prices. The CCR should establish a maximum price for additional allocations rather than a minimum as the rule suggests.

**RESPONSE:** RGGI’s IPM analysis for the amended model rule takes into account different trigger prices and concludes that the CCR trigger prices of \$4 in 2014, \$6 in 2015, \$8 in 2016, \$10 in 2017, and an increase of 2.5% each year thereafter are the most appropriate and effective options. Lower trigger prices

would result in more frequent utilization of the CCR, an increase in the supply of allowances and smaller emissions reductions.

The Department does not see the need for a maximum price since the release of additional allowances from the CCR is expected to have a moderating effect of allowance prices.

A federal program to reduce greenhouse gas emissions from new and existing power plants under Clean Air Act Section 111 is under regulatory development by U.S. EPA. Implementation of CAA Section 111 emission standards and guidelines applicable to non-RGGI power plants will likely eliminate the potential for leakage. Until the federal program is implemented, the RGGI states have committed to engage in a collaborative effort to identify and evaluate potential imports tracking tools, conduct further modeling to ascertain energy and price implications of any potential policy on emissions associated with imported electricity, and pursue additional legal research necessary, leading to a workable, practicable, and legal mechanism to address emissions associated with imported electricity. (see Principle IV. Emissions Leakage in the document *RGGI 2012 Program Review: Summary of Recommendations to Accompany Model Rule Amendments* at: [http://rggi.org/docs/ProgramReview/\\_FinalProgramReviewMaterials/Recommendations\\_Summary.pdf](http://rggi.org/docs/ProgramReview/_FinalProgramReviewMaterials/Recommendations_Summary.pdf) )

**12. COMMENT:** A regional transmission organization updated its 2009 climate change policy study to include current market conditions. A key conclusion changed in the revised analysis to state that even without any price on CO<sub>2</sub> emissions, due to prospects for low natural gas prices and the EPA Mercury and Air Toxic Standards (MATS) rule, there will be a significant change in the capacity mix from coal to natural gas beginning June 1, 2014, which implies that an increasing amount of combined cycle gas generation will come on line that will likely be dispatched ahead of coal. This is not a position on Maryland's policy but rather provides a factual context that may be useful to the discussion.

**RESPONSE:** The revised analysis by the regional transmission organization makes predictions similar to the IPM modeling runs performed during program review.

**13. COMMENT:** Impacts on the running costs of different generating types in Maryland can be readily understood with coal units emitting approximately 1 ton of CO<sub>2</sub>/MWh and combined cycle natural gas units emitting about 0.4 tons of CO<sub>2</sub>/MWh. At these emission rates and the proposed CCR trigger prices, the running costs of a coal and combined cycle plant would increase by \$10/MWh and \$4/MWh respectively in 2017.

**RESPONSE:** The conclusions of the commenter are true only if the CCR is triggered in 2017, or in the unlikely event, considering RGGI modeling results, allowance prices reach \$10.



**14. COMMENT:** The revised CO<sub>2</sub> budget will provide additional funds for Maryland's energy efficiency and clean energy programs funded by the Strategic Energy Investment Fund (SEIF).

**RESPONSE:** Based on the 2012 Comprehensive Program Review modeling, we expect the auctions will produce additional revenue for energy efficiency and renewable energy.

**15. COMMENT:** RGGI's current efforts to reduce CO<sub>2</sub> emissions by dramatically reducing the overall cap will result in the relocation of generation because RGGI is a regional program. The higher allowance prices that will be produced by the more stringent cap will cause non-RGGI generators to become more cost-competitive in the regional wholesale markets relative to generators in RGGI states causing generation in non-RGGI states to increase and displace generation in RGGI states. This will increase the emissions of both CO<sub>2</sub> and criteria pollutants outside of the RGGI region, with negative environmental impacts both outside and within the RGGI region. The result will be higher power prices not just in the RGGI states, but in non-RGGI states as well.

**RESPONSE:** RGGI's IPM analysis for the amended model rule shows that based on historical and projected CO<sub>2</sub> emissions for the RGGI states, the decrease in the number of allowances will ensure that the 91 million ton CO<sub>2</sub> cap will be a "binding" cap, limiting emissions enough to produce a reduction in CO<sub>2</sub> without being overly stringent.

The proposed cap was selected after extensive analysis using the IPM to simulate high, low and reference case emission scenarios. The analysis predicted increasing allowance prices over the seven year analysis period. These prices were further analyzed to determine the impact of the price increases on electricity bills in Maryland as well as the overall effect of the price changes on Maryland's economy. These analyses indicated very low impacts on electricity bills and a positive effect on Maryland's economy.

It is possible that the cost of CO<sub>2</sub> allowances could contribute to a price differential between in-state generators and out-of-state generators, creating the potential to import electricity with higher carbon content into Maryland than would have occurred if in-state generation were dispatched. This occurrence is called leakage. However, Maryland and the other RGGI states have already released three reports that demonstrate leakage has not been a problem, and are committed to monitoring for possible leakage of emissions in the future.

Although RGGI is the first regional greenhouse gas cap-and-trade program to reduce CO<sub>2</sub> emissions from power plants in the country, federal programs to reduce greenhouse gas emissions have been proposed under Clean Air Act Section 111(d) requirements. Adoption of a federal Section 111 program for CO<sub>2</sub> emissions from electric generating units will likely subject non-RGGI power plants to equivalent or near equivalent regulatory requirements, thereby addressing any inequities attributable to RGGI, to the extent they exist.

**Not Relevant to proposed changes**

**16. COMMENT:** An advocacy group commented it does not support regional climate change initiatives such as RGGI.

**RESPONSE:** This comment is an expression of opinion and requires no response.

**17. COMMENT:** RGGI has key design features that prevent it from effectively addressing climate change:

- Complete focus on taking revenues from owners of electric generating units and using the revenues primarily to support energy efficiency measures in the end-use sector and, increasingly, for purposes completely unrelated to emissions reductions;
- Limited regional nature and resulting emissions leakage to non-RGGI states;
- Incomplete and discriminatory scope; and
- Significant legal uncertainty and vulnerability.

**RESPONSE:** This comment is not germane to proposed amendments to the existing regulations that are the subject of this rulemaking.

**18. COMMENT:** RGGI taxes fossil fuel based energy providers to fund energy efficiency providers and Maryland does not provide effective policies to support low or no carbon resources. A balanced system consisting of a cap-and-trade program to limit CO<sub>2</sub> emissions, strong incentives for energy efficiency, and complementary measures that incent the competitive deployment of large scale and distributed renewable energy (potentially through state-mandated long-term contracts), electric vehicle charging systems, and low carbon fuels that can attract significant low carbon technology investment and innovation to the state in a manner that both reduces emissions and benefits consumers is a preferable approach.

**RESPONSE:** This comment is not germane to the proposed amendments to the existing regulations that are the subject of this rulemaking. That said, Maryland has policies that specifically address many of the items listed above. EmPOWER Maryland targets a 15% per capita reduction in peak demand and electricity use. Maryland has a robust 20% RPS with a 2% solar carve out, and the State has led by example through the Generating Clean Horizons program that signed long term contracts with renewable generators. The State has provided millions of dollars in funding for public and private EV charging stations, and has increased the use of E85 cars in the State fleet.

**19. COMMENT:** RGGI's ineffectiveness and the perverse results of the proposed revisions are magnified because RGGI affects only units that serve an electricity generator with a nameplate capacity equal to or greater than 25 MW and is not applicable to smaller units.

**RESPONSE:** This comment is not germane to the proposed amendments to the existing regulations that are the subject of this rulemaking.

**20. COMMENT:** Maryland's current allocation of allowances at no cost to one long-term contract generator discriminates under the Maryland and U.S. Constitutions.

**RESPONSE:** Although this comment is outside the scope of the proposed amendments because it pertains to the existing Maryland CO<sub>2</sub> Budget Trading Program, under the existing regulations, Maryland does not provide allowances at no cost to long-term contract generators. The Office of the Attorney General has reviewed the existing and proposed regulations and concluded that they are in accordance with all applicable law, including the Clean Air Act and the Maryland and United States' Constitutions.

**21. COMMENT:** RGGI may violate the Compact Clause of the United States Constitution and may conflict with section 102(c) of the federal Clean Air Act since RGGI is an agreement among multiple states – created without the consent of Congress – by which the states obligate themselves to a set of common rules and limitations that affect interstate commerce in a manner that an individual state, acting alone, could not.

**RESPONSE:** This comment is not germane to the proposed amendments to the existing Maryland CO<sub>2</sub> Budget Trading Program that are the subject of this rulemaking. The Office of the Attorney General has reviewed the existing and proposed regulations and concluded that they are in accordance with all applicable law, including the Clean Air Act and the Maryland and United States' Constitutions.

**22. COMMENT:** Maryland's participation in RGGI is an important element of its innovative climate change and energy efficiency programs.

**RESPONSE:** The Department agrees with this comment.